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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,458	04/19/2001	Michael J. McNallan	27611/36440A	2100

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EXAMINER

HOWARD, JACQUELINE V

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/838,458

Applicant(s)

MCNALLAN ET AL.

Examiner

Jacqueline V. Howard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 and 24-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

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Applicant's election with traverse of Group III, claims 16-23, in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the process of manufacturing Groups I, II and IV (claims 1-15 and 24) should be examined since these claims are not drawn, per se, to a method of etching, but to the method of manufacturing a substrate having a diamond or diamond and carbon surface. This is not found persuasive because the process of Group I can be used to make a product, which is not a bearing, disposed as part of a mechanical device such as a valve for controlling the flow of a fluid. The process of Group II, claim 15 is drawn to a method of making a bearing from a mass of powdered metal carbide particles while the product of Group III is to a bearing as a part of a mechanical device. Thus the process of Group II will not make the product of Group III. The product made by the process of Group IV is not a bearing. One seeking to make a bearing would not look to art related to making a prosthesis.

The requirement is still deemed proper and is therefore made FINAL.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNallan et al "Formation of Carbon Coatings on Silicon Carbide by Reactions In Halogen Containing Media" in view of Cooper et al (5,482,602).

McNallan et al teach that carbon films on ceramic surfaces can be used for numerous applications in many fields of engineering. Examples of applications where these films can add value include reinforcing phases for ceramic matrix composites. The carbon films are applied by etching in halogen and hydrogen-containing gases for a time and temperature sufficient to provide essentially only diamond or diamond and carbon on said ceramic matrix.

Cooper et al is relied on as teaching that diamond like carbon coatings having high wear resistance, high hardness, good corrosion resistance and chemical inertness (column 1, lines 16-34) may be deposited on the inner and outer raceways and/or bearing elements of a bearing assembly (column 4, lines 5-17).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a surface layer as taught by McNallan et al on a bearing surface as taught by Cooper et al in order to improve the wear resistance, corrosion resistance and chemical inertness of said surface.

Claims 16-23 are rejected under 35 USC 103(a) as being unpatentable over Gogotsi et al "Carbon coatings on silicon carbide by reaction with chlorine-containing gases."

Gogotsi et al teach that carbon films have been produced on the surface of SiC particles by reaction with Ar-Cl and Ar-Cl₂-H₂ gas mixtures at atmospheric pressures and that graphitic and diamond films are used in tribology to decrease coefficients of friction and improve wear resistance of sliding parts. Accordingly, it would have been obvious to one having ordinary

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skill in the art at the time the invention was made to form a carbon film on a bearing surface as taught by Gogotsi et al.

Any inquiry concerning this communication should be directed to J. V. Howard at telephone number (703) 308-2514.

J.C. Howard/dh
July 14, 2003

J. V. Howard
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